What is claimed is:

1. An ozone gas measurement method comprising the steps of:

preparing a sensing element in which a dye that changes in a light absorption characteristic of a visible region upon reaction with ozone gas is deposited in a pore of a porous material;

exposing the sensing element to a measurement environment for a predetermined time; and

measuring an ozone gas amount in a measurement target gas on the basis of a change in the dye before and after exposing the sensing element to the measurement environment for a predetermined time.

2. A method according to claim 1, wherein the step of measuring the ozone gas amount comprises the step of measuring a change in light transmittance.

3. A method according to claim 2, wherein the step of measuring the ozone gas amount comprises the steps of

measuring the light transmittance of the sensing element to obtain a first transmittance, and

measuring an ozone gas amount in the measurement target gas on the basis of the first transmittance, and a second transmittance before the

sensing element measured in advance is exposed to the measurement environment for the predetermined time.

4. A method according to claim 1, wherein at least some pores in the porous material are coupled to pores on a surface of the porous material.

5. A method according to claim 1, wherein a pore in the porous material has such a pore diameter as to attain a predetermined transmittance in the visible light region.

6. A method according to claim 5, wherein the pore diameter is not more than 20 nm at which the dye can enter the pore.

7. A method according to claim 1, wherein the dye comprises an aromatic compound having a diazo group.

8. A method according to claim 7, wherein the aromatic compound comprises one material selected from the group consisting of benzene, naphthalene, and anthracene.

9. A method according to claim 7, wherein the dye comprises a compound having any one of a hydroxyl group, a sulfurous acid group, and primary to tertiary amino

groups.

10. A method according to claim 1, wherein the dye comprises a triphenylmethane stain.

11. A method according to claim 1, wherein the dye contains fuchsonimine.

12. A method according to claim 1, wherein the dye contains indigo.

13. A method according to any one of claims 10 and 11, wherein the sensing element further comprises a material having an alkali characteristic in addition to the dye.

14. A method according to claim 1, wherein the sensing element further comprises an acid gas sorbent in addition to the dye.

15. A method according to claim 14, wherein the acid gas sorbent comprises one material selected from the group consisting of glycerol and triethanolamine.

16. A method according to any one of claims 7 and 12, wherein the sensing element further comprises an acid in addition to the dye.

17. A method according to claim 16, wherein the acid comprises one acid selected from the group consisting of hydrochloric acid, acetic acid, sulfuric acid, and phosphoric acid.

18. A method according to claim 16, wherein the sensing element further comprises a hygroscopic compound in addition to the dye and the acid.

19. A method according to claim 18, wherein the hygroscopic compound comprises one material selected from the group consisting of glycerol and ethylene glycol.

20. A method according to any one of claims 7 and 12, wherein the sensing element further comprises a buffer in addition to the dye.

21. An ozone gas sensing element comprising:

a porous material; and

a dye which is deposited in a pore of said porous material and changes in a light absorption characteristic of a visible region upon reaction with ozone gas.

22. An element according to claim 21, wherein at

least some pores in said porous material are coupled to pores on a surface of said porous material.

23. An element according to claim 21, wherein a pore in said porous material has such a pore diameter as to attain a predetermined transmittance in the visible light region.

24. An element according to claim 23, wherein the pore diameter is not more than 20 nm at which the dye can enter the pore.

25. An element according to claim 21, wherein the dye comprises an aromatic compound having a diazo group.

26. An element according to claim 25, wherein the aromatic compound comprises one material selected from the group consisting of benzene, naphthalene, and anthracene.

27. An element according to claim 25, wherein the dye comprises a compound having any one of a hydroxyl group, a sulfurous acid group, and primary to tertiary amino groups.

28. An element according to claim 21, wherein the dye comprises a triphenylmethane stain.

29. An element according to claim 21, wherein the dye contains fuchsonimine.

30. An element according to claim 21, wherein the dye contains indigo.

31. An element according to any one of claims 28 and 29, wherein said sensing element further comprises a material having an alkali characteristic in addition to the dye.

32. An element according to claim 21, wherein said sensing element further comprises an acid gas sorbent in addition to the dye.

33. An element according to claim 32, wherein the acid gas sorbent comprises one material selected from the group consisting of glycerol and triethanolamine.

34. An element according to any one of claims 25 and 30, wherein said sensing element further comprises an acid in addition to the dye.

35. An element according to claim 34, wherein the acid comprises one acid selected from the group consisting of hydrochloric acid, acetic acid, sulfuric

acid, and phosphoric acid.

36. An element according to claim 34, wherein said sensing element further comprises a hygroscopic compound in addition to the dye and the acid.

37. An element according to claim 36, wherein the hygroscopic compound comprises one material selected from the group consisting of glycerol and ethylene glycol.

38. An element according to any one of claims 25 and 30, wherein said sensing element further comprises a buffer in addition to the dye.

39. An element according to claim 38, wherein the buffer comprises phosphoric acid and sodiumdihydrogenphosphate dehydrate.

40. An ozone gas measurement apparatus comprising:

a light-emitting unit;

a light-detecting unit;

a sensing element; and

a signal processing unit,

wherein said light-emitting unit emits light having a predetermined wavelength,

said sensing element is interposed between

said light-detecting unit and said light-receiving unit, and comprises a porous material, and a dye which is deposited in a pore of the porous material and changes in a light absorption characteristic of a visible region upon reaction with ozone gas,

said light-detecting unit comprises a light-receiving surface arranged to face said light-emitting unit, receives, via said sensing element, light emitted by said light-emitting unit, and outputs a signal corresponding to a light quantity received by the light-receiving surface, and

said signal processing unit calculates an ozone gas amount on the basis of the signal output from said light-detecting unit and a light absorption characteristic, obtained in advance, of said sensing element which contains the dye before reaction with the ozone gas.

41. An apparatus according to claim 40, wherein at least some pores in the porous material are coupled to pores on a surface of the porous material.

42. An apparatus according to claim 40, wherein a pore in the porous material has such a pore diameter as to attain a predetermined transmittance in the visible light region.

43. An apparatus according to claim 42, wherein the pore diameter is not more than 20 nm at which the dye can enter the pore.

44. An apparatus according to claim 40, wherein the dye comprises an aromatic compound having a diazo group.

45. An apparatus according to claim 44, wherein the aromatic compound comprises one material selected from the group consisting of benzene, naphthalene, and anthracene.

46. An apparatus according to claim 44, wherein the dye comprises a compound having any one of a hydroxyl group, a sulfurous acid group, and primary to tertiary amino groups.

47. An apparatus according to claim 40, wherein the dye comprises a triphenylmethane stain.

48. An apparatus according to claim 40, wherein the dye contains fuchsonimine.

49. An apparatus according to claim 40, wherein the dye contains indigo.

50. An apparatus according to any one of claims 47 and 48, wherein said sensing element further comprises a material having an alkali characteristic in addition to the dye.

51. An apparatus according to claim 40, wherein said sensing element further comprises an acid gas sorbent in addition to the dye.

52. An apparatus according to claim 51, wherein the acid gas sorbent comprises one material selected from the group consisting of glycerol and triethanolamine.

53. An apparatus according to any one of claims 44 and 49, wherein said sensing element further comprises an acid in addition to the dye.

54. An apparatus according to claim 53, wherein the acid comprises one acid selected from the group consisting of hydrochloric acid, acetic acid, sulfuric acid, and phosphoric acid.

55. An apparatus according to claim 53, wherein said sensing element further comprises a hygroscopic compound in addition to the dye and the acid.

56. An apparatus according to claim 55, wherein the hygroscopic compound comprises one material selected from the group consisting of glycerol and ethylene glycol.

57. An apparatus according to any one of claims 44 and 49, wherein said sensing element further comprises a buffer in addition to the dye.

58. An apparatus according to claim 57, wherein the buffer comprises phosphoric acid and sodiumdihydrogenphosphate dehydrate.